

MEDEDELINGEN VAN DE LANDBOUWHOGESCHOOL
TE WAGENINGEN/NEDERLAND – DEEL 50, VERHANDELING 3

THE HISTORY OF THE “PERSIAN”
CYCLAMEN

BY

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H. VEENMAN & ZONEN – WAGENINGEN – 1950

397027

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Publicatie no 88 van het Laboratorium voor Tuinbouwplantenteelt
der Landbouwhogeschool, Wageningen

(Received 5.5.'50)

I. INTRODUCTION

In a recent paper about the taxonomy and nomenclature of *Cyclamen* (DOORENBOS, 1950) the so called *Persian Cyclamen*, *C. persicum* MILL., was only briefly described. However, from a horticultural point of view this is the most important species of the genus. The others, if grown commercially at all, are never to be found in great quantities, but millions of plants of the *Persian Cyclamen* are grown yearly in numerous nurseries in Western Europe and the U.S.A.

A century of cultivation on a steadily increasing scale has altered the appearance of the plant considerably. No one who has the opportunity to compare plants of the wild species with those of the modern strains can fail to be struck by the enormous difference, notably in shape, size and colour of the flower.

The main purpose of this article is to contribute to the solution of the problem of how, when and where these changes came about.

Firstly the wild forms will be described from the fairly extensive number of plants collected in Cyprus and Palestine and present in the collection of the Horticultural Laboratory at Wageningen. Then the matter will be taken up from the historical angle. All data about the breeding of the *Cyclamen* to be found in the principal horticultural literature, notably periodicals, of Great Britain, Germany, France, Belgium and some other countries have been collected. The information thus gathered falls under three headings:

- a. Coloured pictures, a chronological list of which is given in § 5;
- b. Descriptions of forms, new at the time; from this data a list of all nominated strains was prepared, which is given in § 7;
- c. More or less explicit accounts of the history of the breeding of certain strains; of these articles all of any importance are mentioned in a bibliography, § 6.

From this large amount of data we have prepared an account of the history of the *Persian Cyclamen* in cultivation, from its introduction in the seventeenth century to the present day.

This is not the first account of the subject. A good review was given by SCHNEIDER and MAATSCH in 1937. It was based mainly on data to be found in MÖLLER's *Deutsche Gärtnerzeitung* and some other German periodicals, notably *Gartenwelt* and *Gartenflora*. The early history is dealt with lightly and often incorrectly, and the same can be said of their writings about the first period in the breeding of *Cyclamen*, as this took place mainly in England. Considering this and also the fact that their account of the German successes is here and there somewhat superficial and uncritical, and on the whole insufficiently documented, the following account did not seem superfluous, even if the main conclusions do not differ much from those of SCHNEIDER and MAATSCH. Before entering upon this account it is

necessary to discuss briefly the nomenclature of the garden varieties. When seen from a morphological point of view, these will be called here *forms*, when grown commercially, *strains*. *Cyclamens* are propagated by seed; this complicates matters. In garden plants propagated asexually, usually each clone bears a fancy name. Then two plants either are identical and should bear the same name, or they are not, in which case they should be given different names. Theoretically there are no difficulties here.

With *Cyclamen* the case is not so basically simple. In old strains especially there was often a great variation among the seedlings, and a good nursery-man was continuously selecting. When a new strain looked promising, several breeders took it up and usually after a few years each of them had selected his own type of plant. If the original name was maintained this led to homonyms. In 1913 it is stated that three different strains of the white flowering *Montblanc* are grown in Germany. Likewise one can discuss to what extent the plants grown nowadays under the name of *Rosa von Marienthal* can be equalized with those that were the first to bear this name in 1881. Often pictures are unreliable and descriptions scanty, and well founded conclusions are impossible. Needless to say also the number of synonyms, given either in ignorance or on purpose, is enormous. No doubt if sufficient data were available, the list in §7 could be greatly reduced. Now the problem of what is the legitimate name of a certain form is in many cases insoluble.

2. DESCRIPTION, DISTRIBUTION AND NOMENCLATURE OF THE WILD SPECIES

For this description we had to our disposal plants from 165 tubers imported from Cyprus and 19 tubers from Palestine, besides a great number of flowering seedlings from these plants. This extensive material permitted us to give attention to the variation of morphological characters in the wild species.

The tubers are flat, with a corky layer fissured into plates or fibers, rooting from the base and the sides. The largest we saw was fifteen centimetres across.

Petioles straight (rarely ascending), 7 to 10 cm long. Leaves broadly cordate with a blunt top and rarely overlapping basis lobes, cartilaginously dentate, sometimes slightly lobed. Upper side dull green (very rarely papillate) with a very variable lighter marking: mostly the veins are silver or light green and the leaf has a concentric band of light blotches. (See fig. 4). Underside green or sometimes purplish.

Flowers in winter (in the greenhouse from September to March), on straight peduncles 18 to 30 cm long, often slightly scented. Calyx-lobes with one much branched nerve, about as long as corolla-tube, ovate, minutely dentate, greenish brown with a white margin. Corolla-tube globose-campanulate (rarely narrow, urceolate), lucid. Corolla-lobes lanceolate and strongly twisted, to obovate and only slightly twisted (fig. 3), mostly white with a purplish base. Pink or lilac forms occur (the darkest we have seen was orchid purple 31/3); while the dark base, which is usually orchid purple 31/1, can be much lighter, or even absent. Anthers densely dotted with black glands (except in some white forms, probably). Style about two mm longer than corolla-tube.

Distribution: Palestine, Syria, Silicia, Cyprus, Crete, Rhodos and some lesser islands in the Eastern Egean. Further far to the West in Tunisia. Not in Persia!

The legitimate name of the species is *Cyclamen persicum*, given by PHILIP MILLER in 1768 in the eighth edition of his Gardeners Dictionary.

Synonyms are:

- C. europaeum* L. Sp. pl. 1 (1753) 145, pro parte
- C. vernale* MILL. Gard. dict. ed. 8 (1768) no 4
- C. pyrotaefolium* SAL. Prodr. (1769) 119
- C. latifolium* SIBTH. & SM. Fl. graec. prodr. II (1813) 356; Boiss. Fl. or. IV (1875) 12
- C. aleppicum* FISCH. ex HOFFG. Verz. Pfl. (1824) 54
- C. antiochium* DCNE Rev. hort. sér. 4 4 (1855) 25
- C. punicum* POMEL Bull. Soc. France bot. 36 (1889) 354
- C. aleppicum* ssp. *punicum* GLASAU Planta 30 (1939) 545

LINNAEUS remarked in his Hortus Cliffortianus (1737, p. 49) that he had seen in the nurseries in the neighbourhood of Haarlem a great number of forms of *Cyclamen*. In his opinion all of these belonged to one species, which he later called *C. europaeum*. As it is known from the catalogues of these Haarlem florists that they cultivated *C. persicum*, there can be little doubt that this species is included in *C. europaeum* of LINNAEUS.

In 1753 LINNAEUS describes another species as well: *C. indicum*, which was thought to be introduced from Ceylon. It never has been identified with certainty. Its corolla-lobes were not reflexed, but spreading, and according to the Flora Zeylanica of LINNAEUS, the peduncles were coiled in fruit. This proves it is not *C. persicum*; yet DECAISNE in 1855 identifies it with this species, adding: „selon l'échalon authentique dans l'herbier de M. Delessert". (It would be interesting to know if this specimen still exists!)

Further the nomenclature offers no difficulties. The name *C. vernale* was given to a form with pink flowers. *C. latifolium*, a name often used in the English horticultural literature of the nineteenth century, was given to Greek specimens. BOISSIER maintained it in favour of *C. persicum* because he thought the latter was meant to indicate the large flowered and intense coloured garden forms. However, these did not yet exist in the eighteenth century.

C. aleppicum was a form with completely white flowers. The name was given to a wild specimen but has often been used for white garden varieties too. GLASAU maintained its specific rank because in his specimens he found 54 instead of the usual 48 chromosomes. For the same reason he kept *C. punicum* as a subspecies of *C. aleppicum*, although these Tunisian plants are morphologically identical with the Asiatic ones.

3. THE HISTORY OF CYCLAMEN PERSICUM IN CULTIVATION

3.1. Introduction into Western Europe and early history

Cyclamen persicum was introduced into Western Europe on many occasions; however, when or where the first introduction took place is not known. CLUSIUS received tubers of *Cyclamen* from Constantinople in the last decade of the sixteenth century, but none of his scanty descriptions of this material fits *C. persicum*; probably *C. neapolitanum* and *C. repandum* were concerned (Rar. plant. hist. II (1601) 265).

According to SCHNEIDER and MAATSCH (1937, p. 11) the *Persian Cyclamen* may have been present in the garden of Queen Elisabeth († 1603). They also state, citing TOURNEFORT, that it was to be found in the nursery of MORIN in 1620 in two forms. (This should be confirmed by MORIN's Catalogus, issued in Paris in 1621, which we could not consult, as it is very rare).

Later in 1654, it was brought to France by BACHELIER, ambassador of the Pope in Constantinople.

In 1665 the ROYAL BOTANICAL GARDEN at Paris, according to its catalogue, possessed several forms of *C. persicum*; one „*Persicum dictum*”, the same with pink flowers, and a „*Cyclamen Antiochemum Nuperorum*”, which clearly belongs here as the description shows.

LE TEXNIER relates that in 1675 an amateur of Gent, Belgium, bought a plant at Lille for five „livres de gros” (well over two pounds); this shows the species was yet very rare.

Soon the forms mentioned in the Parisian catalogue were obtained by the Hortus Botanicus at Leiden; HERMANN'S Catalogus of 1687 even adds a new one „*floribus maximis omnino niveis*”. The species had been introduced into the Netherlands more than fifteen years before. ABRAHAM MUNTING describes it as „*Cyclamen vernum flore albo odorato*” on p. 389 of his „*Waare Oeffening der Planten*” (Amsterdam 1672). In one of his later works (1696) he pictures it as „*Cyclamen vernum majus flore albo odorato*” (see fig. 5). A *Cyclamen Aleppicum* is mentioned, but this apparently had purple flowers. A new catalogue of the Hortus at Leiden, prepared by BOERHAAVE in 1720, mentions fewer forms than HERMANN'S. In the mean time, however, the *Persian Cyclamen* became distributed by the florists. The catalogue of NICOLAAS VAN KAMPEN, Haarlem, of 1739 mentions three forms: *C. Aleppicum Albo*, *C. Alepic. Alb. int. rubr.* and *C. Aleppicum Carneum*. There can be no doubt, that at this time the *Persian Cyclamen* was firmly established in Holland.

In England the introduction apparently took place later. MORISON'S *Historia*, of which we saw the second edition (1715) mentions all forms known at the time, and gives a picture of „*Cyclamen Orientale Katmer Bouhour Turcarum*”, which might represent *C. persicum* although the description states the peduncles are coiled in fruit. It is not certain, however, that these plants were introduced in England at this time. In 1731 plants were sent to England by SIBTHORP from Cyprus, and MILLER described them in the first edition of his *Gardeners Dictionary*. From then on the species was included in every collection.

For the next century *Cyclamen persicum* was a collector's plant. It was pictured several times and occasionally offered by florists; but it was not important in any way.

During the nineteenth century, however, especially after 1850, the *Persian Cyclamen* was more generally cultivated and after 1870 it gradually became the very popular plant it is today. Apart from the beauty of the plant there are three reasons for this development.

The most important factor was the improvement of the method of cultivation. At first this plant was looked upon as difficult to grow and poorly flowering. To obtain a good showy plant one had to cultivate it for several years. Generally few seeds were obtained and it was a common practice to propagate it by dividing the tubers, a hazardous operation. The plants were repotted several times and in summer the tubers were stored in a dry spot for a few months, as it was believed they needed a long rest period. JOHN WILMOTT, Isleworth, is said to have been, in 1826, the first to apply the modern method of letting the seedlings grow without a rest period till they are in flower, reducing the time of cultivation eventually to about fifteen months. However, before this method became fully developed and generally known forty years had to pass.

In the second place we have to look upon the economical circumstances. In

1850 Great Britain had entered upon a period of great prosperity. This favoured the cultivation of flowers, as the demand for this kind of luxury steadily increased. It is interesting to see how in Germany, where prosperity arose later, the popularity of the *Cyclamen* also started later, in the late seventies.

The third reason for the success of the *Cyclamen* were the striking results of the breeding of new forms, which we will discuss below.

3.2. *The period of the small flowered forms*

In 1840 the firm of E. G. HENDERSON and SONS, St John's Wood, bought *Cyclamen* forms cultivated by E. H. KRELAGE, Haarlem, and in the following years set themselves to the cultivation of this plant. New forms were selected and some of the results of this breeding work are shown on coloured plates issued in 1861. Some progress had been made; although most of the flowers are of pale shades, hardly different from those to be found in the wild species, some are of a deep rose colour (i.e. *Atropurpureum* and *Rubrum*).

About this time J. WIGGINS, gardener of W. BECK, Isleworth, devoted himself to the breeding of this plant and soon made considerable progress. Some of his forms are shown on coloured pictures in the *Floral Magazine* of 1867, 1868 and 1869; especially red forms (*Rubrum*, *Oriiflamme*, *Firely*) and a lilac one (*Mauve Queen*) are of interest.

In 1870 an amateur who was to become one of the most successful British breeders of *Cyclamen*, H. LITTLE, of Twickenham, exhibited his first results. Two of his forms, *Queen of the Crimson*s and *Purpureum*, obtained a First Class Certificate of Merit (FCC). In the same year J. WELCH got a FCC for his *Kermesinum*.

At this time the best English forms had yet small flowers, but good intense colours ranging from lilac and rose to purple and crimson.

In Germany one begins to hear something of the *Cyclamen* about 1860. As early as 1863 the firm of seed merchants HAAGE and SCHMIDT at Erfurt offered sixteen different forms. The colours may be judged from the indications, i.e. *Flore Rubro*, *Flore Roseo*, *Lilacinum Grandiflorum*, *Major Amarantinum*. Also the following attract the attention: *Rubrum Flore Pleno*, *Marginatum* and *Robustum*. Of the novelties of the following years we mention: *Carmineum Superbum*, *Major Purpureum* and *Kermesinum*. In 1865 a *Luteum* is offered (!).

It is not known to what extent some of these forms were similar or even identical with English ones of the same name, as no coloured pictures of the German forms of this time could be found.

Especially to be mentioned is a strain that was the first among the German ones to receive a fancy name: *Wilhelm I*. It was raised by AD. SCHMIDT, Berlin, from a form called *Atrorubrum* and put upon the market in 1868. It is described as „deep red”, but one has to bear in mind that real red did not yet exist in *Cyclamen*. A coloured picture shows the flowers were purple with a deep purple base.

Of the French pioneers we mention FOURNIER, Paris, of whose results several coloured pictures exist. Starting about 1836 he soon made progress and the plants he exhibited in 1849 drew much attention. In 1853 he offered nine forms in colours ranging from pure white to reddish purple. His strains came only partly true from seed, however, and his method of cultivation was primitive, as it took three or four years to get a flowering plant. Another French pioneer was C. TRUFFAUT, Versailles, who about 1856 cultivated two thousand plants yearly.

From 1856 to 1875 little is known about the history of the *Cyclamen* in France;

apparently the plant drew very little attention, probably because the good method of cultivation was not known.

Nor is known anything about other countries.

During the first period in the breeding of *Cyclamen* little progress had been made in respect to the size of the flower. In the wild species most plants have narrow, twisted corolla-lobes, but some have broad and more flat lobes, which make the flower effective. Generally the latter type of flower had been selected, but although some forms were indicated as *grandiflorum* or *major* their flowers were but very little longer than those of the wild forms.

Then suddenly in 1870 plants with flowers almost twice as large were found in England as well as in Germany, which opened up an entirely new field for breeding.

3.3. *The period of the giganteum forms with purplish colours*

It is an interesting problem how the large flowered forms of *Cyclamen* came about. What exactly did happen genetically? GLASAU thought it could be explained by polyploidy; he even supposed that the new method of cultivation could not be practised before polyploid forms were obtained, as it is (he thought) a characteristic of these to flower in a much shorter time. In both respects GLASAU was wrong; even not all of our present day varieties are polyploid, and it is perfectly possible to grow a good plant of a diploid form in fifteen months, as fig. 2 shows.

As to the question, which mutation actually did occur (if it was a mutation), we have at this moment no hypothesis to offer. It may be of interest, however, to point out the following. In the collection of the Horticultural Laboratory there are 184 plants of the wild *Cyclamen persicum*, introduced from their natural habitat in Cyprus and Palestine. From among these a plant of good habit but small flowers was selected and self-pollinated. The offspring of this plant was very remarkable. A specimen is shown in fig. 2. The difference with the ordinary wild forms (fig. 1) is striking. It can reasonably be suspected, that the genetical differences between these plants and the wild forms are about the same as existed between the large flowered forms which caused so much sensation about 1870 and the previously known strains. If this is true, these differences are now open to analysis.

As already mentioned, the big flowered forms occurred in England and Germany almost simultaneously. In 1870 the Floral Magazine issued a coloured picture of a form called *Giganteum Rubrum*. It had been obtained by EDMONDS, Hayes, who formerly had been employed by the firm of E. G. HENDERSON and SONS, whose successes with *Cyclamen* we already mentioned. The new strain drew considerable attention. The Floral Magazine wrote: „In the size of its flower it surpasses all that have been hitherto raised, while their colour is of a bright rich rosy purple. The foliage is also remarkably fine and there can be little doubt that it indicates a „Break“ from whence we may expect great things.”

The oldest of the other mutants (all of which had white flowers with a crimson base) was perhaps *Unicum*, offered in 1871 by HAAGE and SCHMIDT, Erfurt, but of unknown origin. (Perhaps raised by KOPFEL in Köthen?) This was followed by *Universum*, obtained by GRAFF, Sorau, in 1871. Of this form a coloured picture exists, which shows it had the same rather narrow twisted corolla-lobes as the strain of EDMONDS.

The third German strain to be mentioned is *Splendens*, obtained by MÜLLER,

Striesen, and put upon the market in 1873. It originated from crosses between three forms: the wild *persicum*, a form called *Splendens*, which MÜLLER bought from an amateur, and *Robustum*, already mentioned on p. 37. The latter two could only be crossed with *C. persicum*, when the wild form was used as motherplant.

The most well-known of these first big flowered forms, however, was *Giganteum*, white with a large purple base, and according to the oldest picture (1875), with six to eight corolla-lobes. It was obtained by WILLIAMS, London, and put into the trade in 1875. The reason for its celebrity was probably in the first place the fact that WILLIAMS was a good show-man, who exhibited his plants on many occasions, in Great Britain as well as abroad. His exhibit of Cyclamens on the Flower-show at Amsterdam in 1877 caused a minor sensation; the plants were bought by GRÜNEBERG from Frankfurt a. M. for 1500 Dutch guilders (£ 125).

It is easy to understand that as soon as these big flowered forms were known, breeders set themselves to obtain forms with flowers of this size in the intense colours that were known in the small flowered strains. Luckily the crossing offered few difficulties (which shows that the original giant strains were not polyploid!).

A fault of the original *Giganteum*-strain was its poor habit; the leaf stalks were too long and the leaves too heavy. An improvement was EDMOND'S *Giganteum compactum Magnificum*, a plant of good compact habit with large white flowers with a crimson base, which obtained a FCC in 1877.

There can be no doubt that at this time England was leading the way. The principal breeders were H. LITTLE, J. WIGGINS, H. B. SMITH, J. EDMONDS, R. CLARKE and J. ODELL. LITTLE moved to Hillingdon in 1876; about this time WIGGINS became his gardener. The two of them obtained 12 FCC's between 1870 and 1884. EDMONDS obtained 10 FCC's (1870-1884); SMITH, Ealing Dean, 7 FCC's (1878-1885); CLARKE, Twickenham, 6 FCC's (1877-1887) and J. ODELL, 3 FCC's (1888-1889).

About 1880 large flowered forms existed in most colours known at the time, except in the darkest shades (indeed, these have been lagging behind in this respect to the present day). Famous English varieties of this period are *Mont Blanc* (1878), *Baroness Burdett Coutts* (1879) and *Dame Blanche* (1884), pure white; *Rosy Morn* (1878) and *Duke of Connaught* (1879), rose with dark base; *Brilliant* (1877), *Crimson King* (1879) and *Albert Victor* (1885), purplish crimson; the latter strain was the darkest known at the time. On the Columbian Exposition in Chicago in 1893 exhibits of American, English, German and French firms could be compared. Here the English strains (*Crimson King*, *Rosy Morn*, *Mont Blanc* and others) made the best impression. Of the German ones, shown by HAAGE and SCHMIDT, Erfurt, only *Kaiser Wilhelm* is mentioned, further this firm showed English strains. French or American strains are not noted. The plants were grown in four inch pots and bore six to twenty flowers each. A great part of the exhibition existed of small flowered forms. This shows that the *Giganteum*-strains only gradually displaced the small flowered forms. In England especially the latter were still being grown for several decades after the giant form was introduced. In 1895 the famous firm of SUTTON and SONS, Reading, not only cultivated giant forms on a big scale but old *persicum*-strains in various colours as well.

The reader will have noted that the best English strains at Chicago in 1893 were about fifteen years old. Indeed about 1885 the breeding of new *Cyclamen* strains in England gradually came to an end. It seemed that the goal was reached. In twenty-five years striking progress had been made. Firstly the colours had been developed to what seemed the largest range and the greatest intensity; then the

size of the flower had been extended to the limit and the same variation in colour had been obtained in these big flowered forms. For many years the above mentioned strains held their own; apparently they could not be surpassed. In 1894 one reads in *The Garden*: „It appears that the raisers of new *Cyclamen* have really arrived at a stage when to attempt further advance in size of bloom or variety in colouring means a downward step.”

Yet pictures of *Cyclamen* of that time show that there were many characters that could be improved. One can hardly wonder why German breeders caught up with their English colleagues, and eventually took the lead. In 1894 English strains were still well spoken of in Germany, but in 1895 a comparison between these and Stoldt's was decided in favour of the latter.

It is to this STOLDT, of Wandsbeck-Marienthal, that the greater part of the success of the German *Cyclamens* is due. Beginning in 1877, he at first used MÜLLER'S *Splendens*, white with crimson base, which he crossed with small flowered forms in good colours. Afterwards he introduced English strains for his breeding purposes.

In 1881 *Rosa von Marienthal* was put upon the market, a form with pale rosy lilac flowers with a purple base which has been maintained to the present day, although no doubt in an improved form. The following year he introduced *Leuchtend Dunkelrot*, crimson, and in 1889 followed a remarkable white form, *Kätzchen Stoldt*. *Leuchtend Dunkelrot* was later crossed with *Albert Victor*; thus *Rubin* originated (1893).

Further we have to mention MÜLLER, Striesen. In his catalogue of 1879 he offered twenty-five forms; his own *Splendens*-strain he apparently had developed into the following forms: white with crimson base, the same with double flowers, white with pale pink base, white with purple base, the same with double flowers, white with dark red base, and rosy lilac.

The same combination of large flowers and rose colour was obtained by RIEDEL, Worms, in his *Krimhild*, which in 1881 was used by RICHTER, Striesen, as one of the starting points for his breeding work.

BENARY, Erfurt, in 1887 put upon the market a strain called *Sanguineum*, which was of a darker purplish red colour than any strain known in Germany. Some other important breeders will be mentioned in the next paragraph.

As far as we could ascertain, the Germans abandoned the small flowered forms as soon as a giant form in the same colour was obtained.

France has not played a role in the breeding of the *Giganteum*-type. In 1878 the editor of the *Revue Horticole* is excited about a *Universum*- or *Giganteum*-strain he got to know through BARDET frères, a French firm stationed at Warsaw. Apparently it was not known in France then, and neither was the modern method of cultivation. About this time, however, English strains and English experience were imported. The most important breeders of the following years were CAILLAUD, Mandres; FORGEOT, Nancy; JOBERT, Châtenay; ROBERT, Sarcelles and TRUFFAUT, Versailles. Their results may be judged from coloured pictures, cited in our iconography.

About the history of the *Cyclamen* in other countries nothing of importance is known.

3.4. *The discovery of the salmon shade and the raising of the modern strains*

As we mentioned previously, at the end of the period just described the giant forms had been obtained in almost any shade known to occur in the *Persian Cyclamen* and one might well think the end of the possibilities within sight. In

1894, however, a form was introduced into the trade that opened up an entirely new colour field.

It was called *Salmon Queen* and raised by the firm of SUTTON and SONS, Reading, from a plant with flowers of a salmonish crimson hue found about ten years previously among crimson seedlings. The new strain had small flowers (it was not a *giganteum*-type) and its habit was poor, but it was a starting point from which soon new and better strains were to be raised. The first of these, *Salmoniums*, came from Switzerland; it was raised by FROEBEL, Zürich, and put upon the market in 1900. Its flowers combined the new colour with a larger size. It had considerable success because of its colour, although the flowers were still rather small, its habit not all that could be desired and a considerable variation occurred among the seedlings. GLASAU, who had the opportunity to study a plant forty years old, showed it to be a tetraploid.

In the meantime the salmon pink shade appeared in Germany too. In 1898 STOLDT found a plant with flowers of this colour among seedlings of *Rosa von Marienthal*. Two years later he found a plant with flowers of the same colour, but only as big as those of the wild species, at an exhibition in Berlin. This specimen he bought but soon dropped, concentrating on the offspring of the plant he had found at his own nursery, which he developed into a strain he called *Ruhm von Wandsbeck* (1906). From this a strain of a lighter salmon pink colour was selected, which was given the name *Rosa von Wandsbeck*.

In the meantime other German breeders were working with *Salmonium*, trying to get forms of a better habit, stronger stems and bigger flowers of the same striking colour. Working along these lines KIAUSCH, Berlin-Zehlendorf, obtained much the same results as STOLDT: a salmon pink strain, *Perle von Zehlendorf* (1907), and a lighter one, *Rosa von Zehlendorf*. These seem to have been almost identical with STOLDT's strains. Similar forms appeared at a number of nurseries where breeding work was done. Soon there were so many of them that it is impossible to mention them here.

The new colour was developed into three directions. In the first place it was tried to get the same shade in plants of a good habit. The first results in this direction we described above: it is the line that leads from *Salmon Queen* over *Salmonium* to *Perle von Zehlendorf*, while STOLDT made a short cut.

Secondly it was tried to get lighter shades. The first steps in this direction were soon made, and both *Rosa*'s, mentioned above, mark the result. It proved difficult, however, to get still lighter shades. The salmon colours on the whole tend to be very heterozygous, and from crosses of light salmon strains with white ones, forms originated that were very difficult to develop into a sufficiently homozygous strain. In 1928 BENARY, Erfurt, offered *Hermosa*, which is described as ivory-rose with a crimson base. The English *Giant Shell Pink* (SUTTON 1925) appears to have been of the same shade. In Holland a similar strain is called *Salmonium oculatum*.

In the third place it was tried to combine the salmon shade with the purple colours. This was a great success. From these crosses originated flaming red colours, entirely new in *Cyclamen*. As this was only a matter of combination of existing genetical factors, the same result was obtained at many nurseries. Among the first strains in this colour were *Lachskarmen* (1908), *Karminzinnobler* and *Lachspurper* (1916) of STOLDT, *Lachsscharlach* (1915) of FISCHER, Wiesbaden, *Leuchtfeuer* (1919) of DLABKA, *Feuergarbe* (1921) of WALTER, Vevey. In England the same colour appears in *Firefly* (SUTTON, 1923), and in Holland it is called

Carmin salmoneum (MAARSE 1916). Possibly not all these almost identical strains (and there are a great many others) were raised independently, as there is good evidence that some renaming must have been going on. The German seed merchants soon agreed to call this colour *Leuchtfeuer*.

Another new development were forms with a light margin along the corolla-lobes. This peculiarity existed in the days of the small flowered forms, and was to be found, for example, in HENDERSON'S *Roseum* (1861), but apparently it was not pursued afterwards. Presently similar forms were offered in every shade of salmon, with a broad white band. We may mention *Alpenglühen*, *Flamingo*, *Pink Pearl*, *Morgenröte*, probably all obtained in Germany in the thirties. In Holland a similar strain is called *Baardse's Wonder*, in Switzerland *Flamme Saumon* (MOLL 1942).

Another *marginatum*-type has dark red corolla-lobes with a very narrow but clearly defined white margin. Here belongs the German *Silberstrahl*, and *Safraninrot mit Silbersaum* (BINNEWIES, 1931).

Although it was in respect to colouring that the most striking progress was made, there were other important advances as well. The habit of the plant was greatly improved; it was tried to obtain a type with compact foliage, beautifully marked and strong flower stems of even length. The flowers should appear in bunches, not separately and have large, broad corolla-lobes. Finally, the strains should be sufficiently homozygous.

These requirements were formulated by German breeders and so strictly observed that from about 1900 onwards they undoubtedly were leading the way. German *Cyclamen* seeds were used all over the world, and this monopoly was maintained after the first World War, although then it gradually became threatened, especially by Dutch nursery-men.

The Germans gathered all their forces to retain their position. In 1923 the principal breeders united in the „Vereinigung der Cyclamenzüchter“, the members of which submitted to a control and judgement of the plants they had selected as seed-parents. In MÖLLERS *Deutsche Gärtnerei*, which devoted much attention to the raising of *Cyclamen*-seed, one can follow the development. In the thirties there gradually comes a hysterical note in the propaganda to improve the culture, and one reads slogans like. „Wir waren an der Spitze, wir sind es und wir werden es bleiben.“ (We were on top, we are on top, we'll stay on top.)

Still one has to admit that in the first decades of this century breeders in other countries did not play nearly such an important role in the raising of new forms and homozygous strains.

In Great Britain well known breeders were the firms of SUTTON and SONS, Reading; Low, Enfield, and the ST GEORGE NURSERY CO, Hanwell. Before SUTTON won the striking *Salmon Queen*, his deep maroon *Vulcan* (1890) and *White Butterfly* (EDMONDS' *Miss Lilian Cox*, 1881) were well known. In 1923 the firm got an award for *Firefly*, intense salmon scarlet, and two years later for *Giant Shell Pink*.

Low's best known success is the crested form *Bush Hill Pioneer*, which will be discussed in the next paragraph. Other strains of his are *Salmon King* (1908) and *Cherry Ripe* (1917).

We already mentioned the principal French breeders. Their results were not striking and on the whole clearly inferior to the German ones. One of the main causes for this was that the French laid too much stress on monstrous forms, and occupied themselves mainly with double or fringed flowered ones. As late as 1891

a form with spotted flowers (later recognized as due to an attack of *Botrytis*) was introduced as an interesting novelty. CAILLAUD took up a very dark red form of FORGEOT, *Roi des Noires* (1881) and developed this into *Triomphe de l'Exposition 1900*. A year before he had obtained a Certificat de Mérite for another dark red form, *Président Viger*. In 1905 he put a *Roi des noires à fleurs doubles* upon the market. More recently awarded French strains are *La Marne*, salmon with crimson base, of RAVISÉ, Ferté-sous-Jouarre, and *Gagné à très grandes fleurs* (1930), which existed in various colours and was developed by GAIGNÉ, St Germain-en-Laye. Some of the numerous French fringed forms will be mentioned in the next paragraph, as will the most important Belgian success, *Papilio* and the Swiss monstrosity *Lemania*. A recent Swiss development is *Helveticum* (MOLL, Zollikon), which is a light salmon form without the usual dark base.

Of the history of the *Cyclamen* in Holland we intend to make a separate study; at this moment the origin of many strains is yet obscure.

3.5. Fringed, crested and other peculiar forms

The *fimbriatum* forms, which have the characteristic of a fringed margin of the corolla-lobes, have been found in several places. In 1872 WIGGINS got a FCC for his *Fimbriata*. LENZ's *Kaiser Wilhelm II* (1889) was slightly fringed. In 1892, TUBBENTHAL put a fimbriated form of *Rosa von Marienthal* upon the market.

The most important year in the history of this forms, however, was 1896, when both DE LANGHE-VERVAENE, Brussels, and RICHTER, Striesen, exhibited new strains. The Belgian strain existed in various colours, mostly rose and purple, and was called *Papilio*. The German one existed in rose, red and white; it had no name.

Papilio became widely known, although the plant had a rather poor habit; its stems were weak, and the broad corolla-lobes were drooping, while the colours were too variable and often bad. Especially German and French breeders set to work on it immediately. J. C. SCHMIDT, Erfurt, in 1899 bought 200 plants of *Papilio*, which he crossed with RICHTER's fringed *Cyclamen*, using the latter as seed parents. The result was called *Rococo* (originally written *Rokoko*) and introduced into the trade in 1904 in white, white with crimson base, rose, and crimson. It was followed in 1906 by *Schneekönigin*, in 1908 by *Rococo Cattleya* and in 1909 by *Weiszer Schwan*. In the same year also a double fringed form with usually rose coloured flowers, called *Gloria*, was introduced.

The original *Rococo* forms had yet drooping corolla-lobes. An important improvement was *Rococo erecta*, with strong stems and more or less upright corolla-lobes, put upon the market by J. C. SCHMIDT in 1912.

In England three fringed forms were awarded. The ST GEORGE NURSERY Co, Hanwell, got an Award of Merit for a strain which not only had fringed flowers but fringed leaves as well. It appeared in 1900 and caused much comment. In 1907 JANNOCH, Dersingham was awarded for his *Fimbriatum giganteum*, with large, saucer-shaped drooping flowers in lilac to purple shades, which were considered to be good for buttonholes. It was a hybrid of *Papilio*.

The third English strain was *Mrs Buckston* (1911), with rose flowers. It was won by an amateur, but taken over by the trade.

The fringed forms had a great success in France. Starting from *Papilio* and probably from strains of other origin as well, French breeders soon obtained a great number of new forms. CAILLAUD got *Gloire de Mandres*, *Mlle Marguerite*

Maron and others (1902); from RIVOIRE, Lyon, came *Gloire de Lyon* (1905). A good compact type was *Monsieur Adnet*, white with crimson base, of AUBERT-MAILLE, Tours (1910). A acquisition of EYSER, St Germain-en-Laye, was *La Perle de Saint-Germain*, purple with crimson base, put upon the market in 1913.

As soon as the salmon colour appeared, this characteristic was crossed into the fringed forms. Few years after the introduction of the *Papilio* and *Rococo*-forms these were offered by German breeders in salmon pink. In other countries these appeared later. We may mention a French strain, *Souvenir de l'Argonne*, obtained by GAIGNÉ in 1925.

A remarkable result was reached by WALTER, La Crottaz (near Vevey, Switzerland). WALTER admired the first *Rococo* forms, but clearly saw their fault, the drooping of the corolla-lobes. However, in stead of selecting forms with upright petals, he followed another course. In 1907 he found among seedlings of *Kätchen Stoldt* a plant with flowers that were not nodding, but stood upright. This he crossed with *Rococo*, and the abnormal characteristic proved to be dominating: among the 83 seedlings 60 had upright flowers. These he crossed again with *Rococo*, and in 1912 a new strain with upright flowers and fringed corolla-lobes was put upon the market under the name of *Lemania*.

Another remarkable fringed form that must be mentioned here is the one in which the frillings of the corolla-lobes are of a darker colour than the blade. It is sometimes indicated as *marginatum*, but this name was used long before for other forms. Usually the flowers are white or light pink with a crimson base and crimson fringes. Among fimbriate forms types are not rare; they occurred about 1895 in several nurseries. Strains which more or less show this characteristic are *Louise Lienau* (LIENAU, 1896) and *Fimbriatum* (HEINEKE, 1898).

A similar form occurred in 1895 in the nursery of KOCH, Wandsbeck, and was bought by STOLDT in 1898, who put it upon the market under the inconspicuous name of *Fimbriatum*. Although it appeared on a coloured picture in the Gartenwelt in 1901, the form was launched some years later by others traders as striking novelty, in 1905 under the name of *Alpenglühchen*, and again in 1907 as *Viktoria* (also in another respect an erroneous name, as it had already been used for another strain).

Of course the French were much interested in this form. It was raised by VALLE-RAND from a cross of *Papilio* and called *Fimbriatum splendens* (1900). From this a similar strain was raised by RIVOIRE, *Triomphe de Lyon* (1906).

Apparently the *cristatum* characteristic is much rarer. It seems that the first plant with crested corolla-lobes was found among the seedlings of R. CLARKE in 1885. It had pure white flowers and was called *Princess of Wales*; it got a FCC in 1887.

For nine years nothing was heard of the crested Cyclamen. Then in 1896 the firm of H. Low, Enfield, obtained a Silver Banksian Medal for the exhibition of a group of a similar white flowered crested form called *Bush Hill Pioneer*. This strain had an overwhelming success in the whole of Western Europe. Several breeders tried to get crested forms in other colours. Low himself obtained a rose form in 1900.

In 1902, HAAGE and SCHMIDT, Erfurt, offered a rose crested form and one called *Bicolor*, rose with a white crest. Three year later J. C. SCHMIDT, Erfurt, had introduced it into *Rococo*. He had a red form with a rose crest, a white one with crimson base and a yellow crest, and even a yellow crested form.

In France, gardener NARBOUTON, Ozouer-la-Ferrières, independently obtained

a form with the same characteristic. It had dark red (presumably purple) flowers, and he developed it into a strain called *Madame Panas*, which he exhibited in 1897. The interest in crested forms apparently soon subsided. Nowadays they are very rare in cultivation.

Forms with striped flowers (*striatum*) have been known a long time. In 1882 LITTLE possessed a form with rosy lilac flowers, distinctly striped with white, which he called *Striata*. In 1889 J. ODELL obtained a FCC for a form called *Empress of India*, the flowers of which are described as follows: deep reddish purple with a broad white band slightly suffused with rose down the centre of each segment. EDMONDS two years later got a FCC for *Miss Beatrice Edmonds*, white with a purple base, closely striped with rose. In Germany striped forms seem to have appeared later. STOLDT obtained such a one in 1909; J. C. SCHMIDT in 1913. The best *striatum*-strain has been up till now *Harlekin*, rose with well defined crimson stripes, introduced by DLABKA in 1923. BRAUKMAN in 1942 introduced a salmon form with a broad white band in the middle of each lobe. It had been found among seedlings of *Perle von Zehlendorf*.

Double flowered forms are known as long as the *Cyclamen* is grown on a large scale. In fact, they are to be found occasionally among wild specimens. Double strains have been offered now and then, especially in France but we will not pursue their history here.

Finally we may mention two characters which, although presenting a great variability in the wild forms, have been more or less neglected in the breeding of the horticultural strains.

The leaves of most modern forms are of a dull dark green, usually without the beautiful silver markings to be found in many of the wild specimens. Yet some breeders have drawn their attention to this character. Mostly forms with a broad band of silver along the margins of the leaf were selected. In 1896 VILMORIN put a strain „à feuillage ornamental”, *Grandiflorum zonale*, upon the market. In England the ST GEORGE NURSERY Co occupied itself with this character and in 1913 *St George*, with bright reddish salmon flowers and leaves marked by a broad band of silver, was awarded. It was followed in 1917 by *Crimson St George*.

In Germany MECKEL, Brühl, starting in 1904 developed a form called *Silberblatt*. Afterwards similar forms in Germany are often called *Rex*, because the similarity of their leaves with those of *Begonia rex*.

A second neglected character is the scent. The modern strains are almost completely scentless. About 1910, when the scent had disappeared from the cultivated forms, it was tried with success in Germany, England, as well as France to raise odorate strains. Similar ones are offered from time to time till the present day, but apparently the character is difficult to maintain and the interest of the public is not deep enough.

4. SUMMARY

The purpose of this study was an inquiry into the question of how the modern garden varieties (strains) of the *Persian Cyclamen* were developed from the wild species.

Firstly, the latter is described from hundreds of living plants, 184 of which had been imported directly from their natural habitat.

The history of the *Cyclamen* in cultivation was traced by collecting all available data from the most important Western European horticultural literature, mostly periodicals.

Cyclamen persicum was introduced into Western Europe in the 17th century. About the middle of the 19th century it gradually became popular and the history of its breeding begins.

During the first period forms are obtained with flowers in colours ranging from pure white via pink and lilac to purplish red. About 1870 forms with corolla-lobes about twice as long as those of the wild forms are found in several nurseries in England as well as in Germany. Fifteen years later these *giganteum*-forms have been obtained in the same colours as the small flowered ones. The third period begins in 1894 with the introduction into the trade of the salmon hue, found in England and afterwards, in 1898, also in Germany. Combination of salmon pink with purplish red leads to a rich real red, another colour entirely new in *Cyclamen*, obtained by several breeders during or shortly after the first World War. In the meantime progress was being made as to general appearance of the plant, shape and size of the flower, etcetera. The history of peculiar forms, especially the fringed and crested ones, is dealt within a separate paragraph. The next paragraphs are devoted to a list of old pictures of the wild species and all coloured plates of the garden forms; a list of over two hundred nominated strains with raiser, year of introduction, short description and enumeration of pictures, and, finally, a bibliography.

ACKNOWLEDGEMENTS

Thanks are due
to the staff of the Library of the Landbouwhogeschool, Wageningen, especially Mr TH. J. IJWEMA, for tireless assistance in securing the extensive amount of literature;
to Miss P. E. STOKES Ph. D., who kindly corrected the manuscript.

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Coloured pictures of garden-forms

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1854 *Hort. franc.* 4, 121 t. XI: five unnamed forms (FOURNIER).
1861 *Illustr. bouq.* 2, t. XXX: *persicum*, *Carminatum*, *Roseum*, *Atropurpureum*, *Variiegatum*, *Rubrum*, *Marginatum*, *Punctatum*, *Album*, *Delicatum* (HENDERSON).
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1867 *Floral mag.* 6, t. 339: *Rubrum grandiflorum*, *Oriiflamme*, *Delicatum album* (WIGGINS).
1868 *Floral mag.* 7, t. 387: *Purity*, *Delicate*, *Mauve Queen*, *Excellent*, *Novelty*, *Firefly* (WIGGINS).
Neub. D. Gart. Mag. 65: *Wilhelm I* (AD. SCHMIDT).

- 1869 *Floral mag.* 8, t. 442: six unnamed forms (WIGGINS).
 1870 *Floral mag.* 9, t. 488: *Giganteum [rubrum]* (EDMONDS).
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 1878 *Rev. hort.* 1, 170: four unnamed forms (TRUFFAUT).
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Picturatum, Crimson King (SMITH).
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 1885 *Rev. hort.* 57, 348: *Robertianum*, five forms (ROBERT).
 1886 *Monit. hort.* 10: four unnamed forms.
 1888 *Rev. hort. belg.* 14, 168: seven unnamed forms.
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Floralia 16, 551 t. 5: six unnamed forms.
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Ill. hort. 43, 235 t. LXIII: unnamed red fringed form.
 1897 *Monit. hort.* 21, 106: *Papilio Brussels Best, Omnibus, Electrique and Passe-*
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Monit. hort. 21, 200: *Bush Hill Pioneer* (LOW).
 1898 *Rev. hort. belg.* 24, 101: *Papilio*.
 1900 *Rev. hort.* 72, 390: forms of VERGEOT.
Jardin 14, 316: various forms (VERGEOT, Nancy).
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 1901 *Gartenwelt* 5, 482: *Salmonium* (FROEBEL). Same picture in *Floralia* 22,
 797 t. 78.
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Austria

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Belgium

La Belgique horticole 1851–1885.

FdS *Flore des serres et des jardins* **1** (1845)–**33** (1880).

Illustration horticole **1** (1854)–**43** (1896).

RHB *Revue de l'horticulture belge* **1** (1875)–**23** (1897).

France

l'Horticulteur français **1** (1851)–**5** (1855); **14** (1864)–**20** (1871).

J *Le Jardin* **1** (1887)–**34** (1920).

Journal de la Soc. Nat. d'Horticult. de France 1855–1949.

MH *Le moniteur horticole* **1** (1877)–**28** (1914).

RH *Revue horticole* **48** (1876)–**115** (1943).

TH *La tribune horticole* **2** (1907)–**9** (1914).

Germany

BPB *Der Blumen- und Pflanzenbau* **38** (1934)–**46** (1942).

Erfurter Gartenzeitung **1** (1887)–**5** (1891).

GF *Gartenflora* 1887–1927.

GS *Gartenschönheit* **1** (1920)–**20** (1939).

GW *Gartenwelt* **1** (1896-'97)–**37** (1933).

MDGZ *Möllers Deutsche Gärtnerzeitung* **1** (1885)–**4** (1939).

NDGM *Neuberts Deutsches Gartenmagazin*.

DG *Praktische Ratgeber im Obst- und Gartenbau* 1889–1943.

Wittmack's Gartenzeitung **1** (1882)–**5** (1886).

Great Britain

Flora and Sylva **1** (1903)–**3** (1905).

FM *The floral magazine* 1861–1879.

The floral world 1872–1880.

GM *The gardeners magazine* **22** (1879)–**37** (1894).

- GC *The gardeners chronicle* 1841–1949.
 G *The garden* 13 (1879)–91 (1927).
 GWd *The gardening world* 1 (1884–'85)–18 (1901–'02).
Journal of horticulture 1868–1902.
 JRHS *Journal of the Royal Horticultural Soc.* 1897–1949.
- U.S.A.
 AF *The American florist* 1 (1886)–23 (1909).
 FE *The floral exchange* 1910–1913.
Garden & Forest 1 (1888)–10 (1897).

7. LIST OF NOMINATED STRAINS

In this list all strains which have at some time been given a fancy name are mentioned in alphabetical order. The names of the raisers are given and the year in which the strain was introduced into the trade. Brackets round the name of the person indicate that, although he grew it, it is not certain he was the raiser. Brackets round the date indicate that the strain was mentioned in this year, but possibly raised before.

The colour of the flower is briefly indicated. Here one has to rely on contemporary descriptions; it should be borne in mind that before 1870 all forms had small flowers, and that before about 1908 real red did not exist. A form described as red before that time must have been more or less purplish. Finally all illustrations of nominated strains we came across in the course of this study are mentioned. For the abbreviations of the titles of periodicals see § 6. Only number of volume and page or table are mentioned. A ! indicates that the picture is coloured.

- | | |
|---|---|
| <i>Acme</i> (PAGE 1885) | white, crimson base |
| rose pink | FdS 22, t. 2345! |
| <i>A feuillage ornamental</i> , see <i>Grandifl. zonale</i> | <i>Album</i> HENDERSON (1861) |
| <i>A grandes fleurs doubles variées</i> JOBERT 1896 | pure white |
| double; var. col. | IB 2, t. xxx! |
| <i>Aigburth Crimson</i> (HAAGE & SCHMIDT 1894) | <i>Album punctatum</i> (1861) |
| <i>Albatross</i> BLACKMORE & LANGDON AM 1940 | white, spotted, crimson base |
| white | FdS 22, t. 2345! |
| <i>Albert Victor</i> CLARKE FCC 1885 | <i>Aleppicum candidissimum</i> (1861) |
| rich crimson | pure white |
| <i>Albidum</i> (1850) | FdS 22, t. 2345! |
| pure white | <i>Aleppicum maculatum elegans</i> (BENARY 1869) |
| <i>Albion</i> PAGE 1885 | white, spotted |
| white | KRATZ Primul. (t. 4)! |
| <i>Albo-violaceum striatum</i> STOLDT 1908 | <i>Alpenglühén</i> MATTHES 1905, see <i>Frimbr. carm. marg.</i> |
| white with purple base and striped purple top | <i>Alpenglühén</i> DLABKA 1932 |
| MDGZ 22, 6, 24, 259 | salmon with white margin |
| <i>Album</i> (1861) | BPB 38, 305 |
| | <i>Amarantinum</i> (1861) |
| | purplish rose |
| | FdS 22, t. 2345! |

- Amethyst* LITTLE FC 1883
purple, crimson base; from *Royal Purple*
- Anemoniflorum* HAAGE & SCHMIDT 1921, see *Lemania*
- Ardor alpinum* MATTHES 1905, see *Fimbr. carm. marg.*
- Atrocoeruleum* (1877)
- Atropurpureum* HENDERSON (1861)
light purple, crimson base
IB 2, t. xxx!
- Atrorubrum* (BENARY 1867)
- Baardse's Wonder* BAARDSE 1938
salmon red with white margin
BPB 44, 369
- Barbarossa* BRAUKMAN 1941
dark salmon pink; crested
BPB 41, 281
- Baroness Burdett Coutts* SMITH FCC 1879
white
- Bath Beauty* BLACKMORE & LANGDON (1922)
salmon
- Bright Red* Low (1900)
- Bright Rose* Low (1900)
- Brilliant* CLARKE FCC 1877
rosy crimson
- Brilliantrosa* TUBBENTHAL 1905, later called *Deutsche Kaiserin*
rosy salmon; *Salmon Queen* × *Salmonium*
GW 9, 479!, 13, 466!
- Brussels Best* DE LANGHE-VERVAENE 1897
dark rose *Papilio*
MH 21, 106! RHB 22, 97!
- Bush Hill Lavender* Low (1900)
fl. darker and smaller than *B. H. Mauve*
- Bush Hill persicum* Low (1900)
white, crimson base
- Bush Hill Pink* Low (1900)
dark rose
- Bush Hill Pioneer* Low Silv. Banks. Med. 1896
white, crested
GC 3 20, 765, 3 21, 70, RHB 23, 73!; MH 21, 200!
- Bush Hill Purpureum* Low (1900)
bright purple
- Bush Hill Red* Low (1900)
dark magenta
- Bush Hill White* Low (1900)
white
- Butterfly*, see *White Butterfly*
- Caledonian strain* (FORSYTH 1924)
var. col.; here belongs e.g. *Giant White Wonder*
- Cardinal* CLARKE (1884)
rosy carmine, crimson base very deep crimson
- Carmin salmonium* (MAARSE 1916)
salmon scarlet
MDGZ 40, 129!
- Carminatum* HENDERSON (1861)
rosy carmine, crimson base
IB 2, t. xxx!
- Carmine* WELCH 1870
- Carmineum* (HAAGE & SCHMIDT 1864)
- Carmineum superbum* (BENARY 1866)
- Carneo-roseum* (1877)
- Carter's Butterfly* (CARTER 1907)
Rococo-type
TH 2, 655
- Carter's crested Cyclamen* (CARTER 1907)
white, crested
TH 2, 654
- Carter's White Swan* (CARTER 1885)
white
TH 2, 655
- Cattleya*
purplish rose; mutation from white
- Charming Bride* EDMONDS FCC 1881
white
- Cherry Ripe* Low AM 1917
bright reddish carmine
- Crimhild(e)*, see *Krimhild*
- Crimson Beauty* LITTLE FCC 1884
bright purplish rosy-crimson
- Crimson Gem* CLARKE (1882)
deep red
- Crimson Gem* LITTLE FCC 1882
crimson
- Crimson King* SMITH FCC 1879
dark lustrous crimson
FM 1879 t. 335!
- Crimson Queen* (1900)
- Crimson St George* St George AM 1917
crimson, leaves bordered with silver

- Cristatum albo-rubrum* (BENARY 1909)
white, crimson base, crested
- Cristatum roseum* (BENARY 1902)
rose, crested
- Dame Blanche* SMITH FCC 1884
white
FE 31, 596
- Delicata* (CLARKE 1882)
white, lilac base
- Delicate* WIGGINS 1868
white, purple base
FM 7, t. 387!
- Delicatum* HENDERSON (1861)
white, pale rose base
IB 2, t. xxx!
- Delicatum* (H. B. SMITH 1880)
nearly white with darker base
- Delicatum album* WIGGINS
white, purple base
FM 6, t. 339
- Deutsche Kaiserin* TUBBENTHAL, see
Brilliantrosa
- Dixon Hartland* ODELL FCC 1888
pale pink, thinly spotted with purple, deep purple base
- Dorothy Seward* SEWARD 1904
- Duke of Connaught* H. B. SMITH Fl. C. 1879
rosy, crimson base
FM 1879 t. 335
- Duke of Fife* St George Fl. C. 1890
rose, purple base
- Eastern Queen* WIGGINS (1884)
white, purple base
- Eileen Low* Low (1910)
rosy-crimson, crested
- Electrique* DE LANGHE-VERVAENE 1897
Papilio, rose with dark base
MH 21, 106!
- Empress of India* ODELL FCC 1889
crimson and white, striped
- Excellent* WIGGINS 1868
white, crimson base
FM 7, t. 387!
- Excelsior* (PAGE 1885)
white, purple base
- Fairy* (1871)
- Fantastic* LITTLE (1873)
pink, double
- Faust* JAMES FCC 1889
deep crimson
- Feuergarbe* WALTER 1921
fiery red
- Feuerzauber* MECKEL 1928; in 1926
called *Leuchtend Salmoneum*
scarlet; from *Salmoneum*
MDGZ 40, 105!
- Fimbriatum* WIGGINS FCC 1872
- Fimbriatum* (grfl. *fimbr.*, *splend. fimbr.*)
HEINEKE 1897
rose with crimson base and margin
GW 2, 117; MDGZ 13, 385
- Fimbriatum* (*splend. fimbr.*) MEISCHKE
1896
fringed; rose, crimson base; from
Krimhild
- Fimbriatum* St George AM 1900
flow. and leaves fringed; var. col.
GC 3 27, 217; JHS 25, p. lxxi
- Fimbriatum album roseum* CAILLAUD
(1904)
Jard. 18, 232
- Fimbriatum carmineo-marginatum*
(*Fimbriatum* KOCH and STOLDT 1898,
Alpenglühén MATTHES 1905, *Viktoria*
KRAUSE and SATTLER 1907)
fringed; white with crimson base
and fringes
GW 6, 366! 25, 254, 26, 277;
MDGZ 22, 147-149; FE 31, 314;
DG 1935 137
- Fimbriatum giganteum* JANNOCH AM
1907
fringed; lilac to purplish; *Papilio* ×
Gig.
- Fimbriatum splendens* VALLERAND 1900
white, crimson base and fringed;
Gig. × *Papilio*
MH 24, 290!
- Fimbriatum superbum* FÉRARD 1903
Jard. 17, 93
- Firefly* WIGGINS 1868
rosy pink with crimson base
FM 7, t. 387!
- Firefly* SUTTON AM 1923
intense salmon-scarlet
- Flamingo* BRAUKMAN (1935)
salmon scarlet with white border

- Flamme BRAUKMAN* 1922
salmon red
- Flamme saumon MOLL* 1942
salmon with white margin
BPB 46, 261; SAUV. Pr. Cycl.
118
- Fliederfarben (HAAGE & SCHMIDT)* 1903
in 1902 *Gig. lilacinum*
lilac
MDGZ 44, 93
- Floribundum compactum ODELL* 1888
dwarf; white, crimson base
- Frau Clara Kunert KUNERT* 1911
dark red
GW 15, 108!
- Frau Oberhofgärtner Kunert KUNERT*
1918
double
- Frau Pregetter PREGETTER* (1939)
dark purplish red; double; scented
BPB 43, 27
- Gagné à tres grandes fleurs GAIGNÉ* 1930
var. col.
- (*The Gem* LITTLE Fl. C. 1879; men-
tioned in 1873
white shaded with pink, crimson
base
- General Gordon WIGGINS* 1884
white
- Gerhard Bubeck BUBECK* 1933
salmon scarlet; from *Leuchfeuer*
- Giant Shell Pink SUTTON* AM 1925
pale pink, crimson base
- Giant Cherry Red SUTTON* (1895)
Giant White × *Salmon Queen*
- Giant Crimson SUTTON* (1895)
Giant Crimson and White SUTTON (1895)
white, crimson base
- Giant Mauve SUTTON* (1908)
- Giant Purple SUTTON* (1895)
- Giant Red SUTTON* (1895)
- Giant Rose SUTTON* (1895)
- Giant Rose Pink SUTTON*
- Giant Rose Queen SUTTON* (1915)
- Giant Salmon Pink SUTTON* (1908)
- Giant White SUTTON* (1891), *Giganteum album*
GM 42, 81; G 85, 417
- Giant White Wonder FORSYTH* AM 1924
G 88, 191
- Giganteum (rubrum) EDMONDS* FCC
1870
rosy purple, crimson base
FM 9, t. 488!
- Giganteum WILLIAMS* (1875)
white, purple base; 7-8 corolla-
lobes
FM 1875 t. 163!
- Giganteum albo-rubrum (BENARY)* 1900
white, crimson base
- Giganteum album SMITH* FCC 1885
- Giganteum album nanum BENARY* 1886
white; dwarf
- Giganteum compactum CLARKE* FCC
1882
white, crimson base
- Giganteum compactum album CLARKE*
FCC 1887
white; stouter and shorter fl. st.
than *Gig.*
- Giganteum delicatum EDMONDS* FCC
1884
white, rose-pink base
- Giganteum lilacinum*, see *Fliederfarben*
- Giganteum (compactum) magnificum*
EDMONDS FCC 1877
white, crimson base
GC n.s. 7, suppl.!: NDGM 1878
184!; AF 8, 955, 959
- Giganteum roseum compactum ED-*
MONDS FCC 1882
rosy pink
- Giganteum superbum CLARKE* FCC 1873
white
- Gloire de Mandres CAILLAUD* 1902
impr. Papilio
- Gloria J. C. SCHMIDT* 1909
double, fringed, rose; from Rococo
MDGZ 27. 268, 269
- Goldlachs BRAUKMAN* 1929
orange salmon
- Grandiflora (REID)* 1894
white, crimson base, striped with
rose
- Grandiflorum (HAAGE & SCHMIDT)* 1863
- Grandiflorum EDMONDS* FCC 1870
- Grandiflorum SMITH* (1880)
delicate blush
- Grandiflorum album St George* AM 1897
white

- Grandiflorum roseum* SMITH (1880)
deep rose, crimson base
- Grandiflorum zonale* VILMORIN-ANDRIEUX 1896
leaves bordered with silver
GF 45, 164
- Harlekin* DLABKA 1923
white or pink with purple stripes
and base
GW 29, 3
- Helveticum* MOLL 1944
salmon pink without dark base
SAUV. Pr. Cycl. 120
- Hermione* BENARY 1929
salmon-crimson with amethyst
- Hermosa* BENARY 1928
ivory pink, crimson base; *Salmo-*
neum × white with
crimson base
GW 36, 1
- Hofrat Rottenberger* PREGETTER (1939)
fringed; white with crimson base;
scented
BPB 43, 27
- Improved Brilliant* CLARKE (1884)
crimson
- James' Prize* (HAAGE & SCHMIDT 1872)
- Jubiläum* SCHOLTE 1948
rosy lilac
- Kärnten* (1941)
fringed; purple
- Kätchen Stoldt* STOLDT 1889
white
MDGZ 23, 5, 36, 78; GW 27, 77
- Kaiser Wilhelm II* LENZ 1889
rose with crimson base; slightly
fringed; *Rosy Morn* × *Amaranti-*
num
GF 39, t. 1336!
- Karminzinnober* STOLDT
- Kermesinum* WELCH FCC 1870
carmine-rose
- King of roses* CLARKE (1884)
blush, pale purple base
- Kirschlachs* BRAUKMANN 1936
- Kirschrot* (BENARY 1907)
cherry red; compact
- Krimhild(e)* RIEDEL (1881)
rose
- Lachsflamme*, see *Flamme saumon*
- Lachskarmin* STOLDT 1908
salmon crimson; *Ruhm v. Wands-*
beck × *Rubin*
- Lachsorange* BINNEWIES (1931)
orange salmon
- Lachspurper* STOLDT 1916
salmon crimson
GW 26, 68, 30, 245; MDGZ 41, 121
- Lachsrosa* GABBERT 1905
salmon pink; from *Salmo-*
neum
GW 28, 463
- Lachsrot* DLABKA 1916
salmon red
- Lachsschartlach* FISCHER 1915
salmon scarlet; *Ruhm v. Wandsbeck*
and *Perle v. Z.* × dark purplish red
MDGZ 43, 207!, 44, 64-66, 45, 3!;
GW 32, 678!
- Lachsscharlachorange* FISCHER (1934)
orange salmon scarlet
- Lady Helen Cassel* (FORSYTH 1925)
- Lemania* WALTER 1912
fringed, upright fl. *Rococo* × mon-
str. *Kätchen Stoldt*
MDGZ 27, 173, 174; 36, 13
- Leonay* (REID 1894)
rosy purple, crimson base
GW 32, 31
- Leuchtend dunkelrot* STOLDT 1882
dark red
GW 6, 366!, 26, 68, 27, 76, 30,
244; BPB 39, 6!; MDGZ 13, 389,
23, 3, 28, 100, 103; Catal.
KIAUSCH suppl. 1911!
- Leuchtendrosa* (KIAUSCH 1911)
salmon
Catal. KIAUSCH suppl. 1911!; GW
32, 31
- Leuchtend(hell)rot* STOLDT (1908)
(purplish) red
MDGZ 23, 6, 38, 115, 119,
145; GW 25, 5, 26, 68, 276, 27,
76, 28, 463; BPB 39, 6!
- Leuchtend Salmo-*
neum, see *Feuerzauber*
- Leuchfeuer* DLABKA 1920 (name after-
wards used for every German strain of
this colour)
salmon scarlet; from *Lachsrot*
GW 32, 3; BPB 39, 6!; MDGZ 40,
130!, 45, 253, 50, 376, 51, 163, 53, 309

- Lilacinum longiflorum* (BENARY 1866)
lilac, crimson base
- Lilacino-roseum* (1877)
- Lord Hillingdon* ODELL FCC 1888
soft pink, crimson base
- Loreley* BENARY 1916
dark purple; *Gig. album* × *Sanguineum*
- Louise Lienau* LIENAU 1896
white, crimson base and rose fringes
MDGZ 11, 117
- Luteum* (HAAGE & SCHMIDT 1865)
- Maculatum* (BARDET 1880)
- Mme Gabriel Debrie* CAILLAUD (1904)
rose
- Mme Marie Debac* CAILLAUD (1904)
white, crimson base
- Mme Panas* NARBOUTON 1897
purple; crested
- Madeleine Truffaut* CAILLAUD 1902
Jard. 18, 232
- Mlle Marguerite Maron* CAILLAUD 1902
white; fringed; from *Fimbriatum album roseum*
Jard. 18, 232
- Magenta Gem* LITTLE (1887)
- Majesticum* ODELL Fl. C. 1887
blush, purple base
- Major roseum* (HAAGE & SCHMIDT 1863)
- Majus amarantinum* (BENARY 1863)
- Margarete* BENARY 1907
white, lilac base
- Marginatum* HENDERSON (1861)
white, pale pink along the margin,
lilac base
IB 2, t. xxx!; FM 1, t. 3!
- Marginatum* WIGGINS (1870)
blush, lilac along the margin; crimson base
- Marginatum* (1879)
rose, white margin, crimson base
- (*La*) *Marne* RAVISÉ 1920
salmon pink, crimson base; salmon × white
- Morginatum purpureum* HENDERSON 1861
blush, darker along the margin, base purple
FM 1, t. 3!
- Mauve Low* (1900)
reddish purple, dark base
- Mauve Queen* WIGGINS 1868
mauve, crimson base
FM 7, t. 387!
- Mauve Queen* (St George 1892)
mauve, crimson base
- May Queen* MAY (1888)
white, purple base
- Meteor* LITTLE FCC 1874
- Meteor* see *Feuerzauber*
- Miss Beatrice Edmonds* EDMONDS FCC 1891
white, closely striped with soft rose, dark base
- Miss Lilian Cox* EDMONDS FCC 1881,
see *White Butterfly*
white, dwarfer than *Charming Bride*
- Miss Little* LITTLE (1867)
- Mrs Buckston* BUCKSTON AM 1911
fringed; pink
GM 56, 879; MDGZ 27, 270; FE 33, 500
- Mrs L. M. Graves* St George AM 1914
salmon-red
G 78, 48
- Mrs H. Little* LITTLE Fl. C. 1883
purplish red
- Mons. Adnet* AUBERT-MAILLE
fringed; white, crimson base
RH 82, 529
- Monstruosum* VILMORIN-ANDRIEUX
var. col.; 8–10 corolla-lobes
GF 44, 203
- Mont Blanc* (HAAGE & SCHMIDT 1877)
- Mont Blanc* SMITH FCC 1878
pure white
FM 1879 t. 335; FE 31, 596
- Mont Blanc* (SATTLER & BETHGE 1892)
white, slightly fringed
- Mont Blanc* (WEBB 1908)
white, purple base
GC 3 43, 252
- Mont Blanc* (1897)
MDGZ 12; 13, 389
- Morgenröte* (WEIGELT 1929)
salmon red
- Morgenröte* (1939)
salmon pink with white margin

- Mozart* BINNEWIES 1932
purplish red
GW 36, 423
- Neulachsrosa* BINNEWIES 1927
salmon pink
GW 32, 678!; MDGZ 43, 257,
44, 65
- Neurosa* BINNEWIES (1940)
BPB 44, 21
- Niveum* (BARDET 1880)
white
- Nordlicht* BENARY 1930
bright crimson; from *Perle v. Z.*
MDGZ 45, 293
- Novelty* WIGGINS 1868
lilac, purple base
FM 7, t. 387!
- Oesterreich* PREGETTER (1940)
double; salmon pink; scented
BPB 44, 5
- Omnibus* DE LANGHE-VERVAENE 1897
dark rose with purple base; *Papilio*
MH 12, 106!
- Orange* BINNEWIES 1934
- Oriflamme* WIGGINS 1867
light red, crimson base
FM 6, t. 339!
- Ourown* St George (1908)
salmon pink; *Gig.* × *Salmon Queen*
- Pallidum* HENDERSON (1861)
white, pale rose base
FM 1, t. 3!
- Papilio* DE LANGHE-VERVAENE 1896,
AM 1897
strongly fringed; var. col.; from
Gigant. ± 1886
RHB 22, 97!, 24, 101!, TH 3, t.
97!; GF 48, 643, 644; MH 18,
150
- Parviflora Cattleya* REICHARD 1942
dwarf; purple
BPB 46, 158
- Parviflora Neurosa* REICHARD 1937
dwarf; pale rose, crimson base
BPB 43, 153
- Parviflora Violetta* REICHARD 1939
dwarf; lilac
BPB 41, 153
- Passe-Partout* DE LANGHE-VERVAENE
1897
- Papilio*; white, crimson base
MH 21, 106!
- (*La*) *Perle de Saint-Germain* EYSER 1913
fringed; mauve, crimson base; *Papilio* × *Superbum*
MH 37, 4!
- Perle von Zehlendorf* KIAUSCH 1905
salmon; *Salmonium* × *Giganteum*
MDGZ 28, 107, 37, 118, 41, 289,
43, 206!, 209, 45, 255, 51, 163;
GW 25, 5, 29, 1, 32, 3; Catal.
KIAUSCH 1912 suppl.!
- Pfirsichblüthe* (1877)
- Pfirsichblüte* (BENARY 1902)
- Pfirsichrosa* (BINNEWIES 1928)
GW 32, 678!
- Phoenix* SUTTON (1885)
bright crimson
- Picturatum* SMITH FCC 1879
white, rose edged, purple base
- Pink Pearl* BINNEWIES 1939
salmon pink, white margin
- Pink Pearl* (SUTTON 1915)
salmon pink
- Pink Pearl fringed* (SUTTON 1915)
salmon pink; fringed
- Président Viger* CAILLAUD 1899
carmine
- Primadonna* BENARY 1928
salmon scarlet; *Salmonium* × *Ru-*
brum
GW 36, 5
- Prince of Orange* St George AM 1889
- Prince of Wales* St George AM 1889
crimson, dark base
- Princess Ida* EDMONDS FCC 1884
delicate pink, crimson base
- Princess May* (St George 1892)
rosy purple
- Princess of Wales* CLARKE FCC 1887
white; crested
GWd 1, 525, 4, 486; GC 1885 536,
1896 765
- Princess Teck* LITTLE
- Prins Bernhard* BAARDSE 1938
rosy lilac
- Prinses Beatrix* BAARDSE 1938
rose with crimson base and fringes
- Prinses Juliana* BAARDSE (1938)
delicate salmon pink, fringed

- Pulcherrimum* (1871)
Punctatum HENDERSON (1861)
 white, spotted, crimson base
 IB 2, t. xxx!; JH 51, 253
Purity WIGGINS 1868
 white
 FM 7, t. 387!
Purity LITTLE 1884 Fl. C.
Purple Gem LITTLE FCC 1876
Purple Queen SUTTON 1895
 selected from *Salmon Queen*
Purplish Rose LITTLE FCC 1870
Purpleum LITTLE FCC 1870
 FM 1872 t. 13!
Queen of the Belgians SMITH FCC 1879
 pure white
 FM 1879 t. 335!
Queen of dwarfs SUTTON (1888)
 white
*Queen of the Crimson*s LITTLE FCC 1870
 crimson
 FM 1872 t. 13!
*Queen of the Crimson*s ODELL 1887
 deep crimson
Queen of the Whites MAY (1890)
 white
Queen Victoria SMITH 1881 Fl. C.
 white
Reading Gem SUTTON FCC 1879
 white, purple base
Reinrosa (1923)
 pale rose, purple base
 MDGZ 38, 115, 44, 93; GW 26,
 67
Reinweisz (KIAUSCH 1908)
 pure white
 Catal. KIAUSCH suppl. 1908!; MDGZ
 25, 196, 44, 90; GW 26, 69, 276;
 BPB 37, 109, 39, 61, 40, 267; GF
 77, 330
Robertianum ROBERT (1885)
 var. col.
 RH 57, 348!
Robustum (HAAGE & SCHMIDT 1863)
 white, crimson base
Roi des Noirs FORGEOT 1885
 dark purple
Roi des Noirs à fleurs doubles CAILLAUD
 1905
 dark purple, double
- Roi des Violets* RIVOIRE 1904
 dark purple
 MH 28, 150!
Rococo (Rokoko) J. C. SCHMIDT 1903
 var. col.; strongly fringed; *Papilio*
 ♂ × RICHTER's *fringed Cyclamen* ♀
 Catal. J. C. SCHMIDT suppl. 1904!;
 GF 52, 578, GW 13, 191, 25, 254;
 BPB 37, 109, 41, 277, 281, 46, 4;
 MDGZ 18, 139, 140, 22, 244-251,
 28, 98-102, 174, 175, 339, 29,
 403-405, 40, 130! 52, 308, 309; GS 6,
 228!; DG 1931 607, 1935 373
Rococo Brilliant TRUNK (1928)
 GW 32, 31
Rococo Cattleya J. C. SCHMIDT 1908
 Catal. KIAUSCH suppl. 1912!; MDGZ
 28, 175
Rococo erecta J. C. SCHMIDT (1912)
 var. col.; fringed; corolla-lobes up-
 right; from *Rococo*
 MDGZ 27, 267, 28, 339-342, 38,
 25, 116, 117; GF 75, 98
Rococo marginatum (BENARY 1915), see
Fimbr. carm. marg.
Rococo Reinweisz J. C. SCHMIDT 1908
 MDGZ 28, 174
Rococo striata BINNEWIES 1931
 DG 1931 607; GW 35, 215
Rosa Perle, see *Pink Pearl*
Rosa von Köln GRAETZ (1925)
 light salmon pink
 MDGZ 40, 137!
Rosa von Marienthal STOLDT 1881
 light rose, crimson base; *Splendens*
 × rose small fl.
 GF 64, 19, GW 27, 77
Rosa von Marienthal gefranst TUBBEN-
 THAL 1892
 fringed
 MDGZ 38, 118
Rosa von Wandsbeck STOLDT 1906
 light salmon pink; selected from
Rühm von Wandsbeck
 MDGZ 26, 255, 28, 449, 451, 40,
 132!, 139!, GW 27, 76, 30, 245
Rosa von Zehlendorf KIAUSCH 1905
 light salmon pink; *Salmeoneum* ×
Rosa v. M. and white with crimson
 base. GW 26, 276; BPB 39, 61

- Rose Bush Hill Pioneer* LOW 1900
rose; crested
- Rose Perfection* SMITH
pale rose, crimson base
- Rose Queen* LITTLE FCC 1874
rose; light rose ♀ × *Queen of the
Crimsons* ♂
FP 1874 181!
- Rose van Aalsmeer*
salmon pink, crimson base
- Roseum* HENDERSON (1861)
rose, crimson base
IB 2, t. xxx!; FdS 22, t. 2345!
- Roseum album* SUTTON (1885)
- Roseum grandiflorum* EDMONDS FCC
1877
- Roseum superbum* (SUTTON 1886)
- Roseum superbum* (BENARY 1920)
MDGZ 35, 289
- Rose Gem* LITTLE Fl. C. 1884
- Rosy Morn* SMITH FCC 1878 Fl. C.
1880
rose, crimson base
FM 1879 t. 315!; AF 8, 955, 957
- Royal Jubilee* ODELL Fl. C. 1887
intense crimson
- Royal Purple* LITTLE FCC 1874
purple; *Queen of the Crimsons* ♀ ×
Purpureum ♂
FP 1874 181!
- Rubin* STOLDT (1901)
purplish red; *Albert Victor* ×
Leuchtend dunkelrot
GW 6, 366!; MGDZ 23, 4
- Rubro-punctatum* RASQUET 1891
rose with purple spots
- Rubro-violaceum* (BENARY 1901)
- Rubrum* HENDERSON (1861)
purple rose, crimson base
IB 2, t. xxx!; FM 1, t. 3!
- Rubrum grandiflorum* WIGGINS 1867
light red, crimson base
FM 6, t. 339!
- Rubrum plenum* (HAAGE & SCHMIDT
1864)
- Ruby* LITTLE FCC 1877
ruby-red
- Ruby Gem* LITTLE & WIGGINS FC, FCC
1881
crimson
- Ruhm von Wandsbeck* STOLDT 1898
salmon pink; mutation of *Rosa v.
Marienthal*
GW 6, 366!, 27, 76, 30, 243;
MDGZ 23, 4, 7, 24, 339, 26,
255, 28, 97, 448, 450, 36, 77, 40,
376
- Ruhm von Worms* RIEDEL 1881
dark purplish red
- Safraninrot* BINNEWIES 1926
dark red
GF 75, 98, GW 32, 678!
- Safraninrot mit Silbersaum* BINNEWIES
1931
dark red with narrow white margin;
from *Safraninrot*
GW 35, 215; BPB 46, 284
- Salmon King* LOW AM 1908 (*Low's Sal-
mon*)
salmon-red
- Salmon Queen* SUTTON AM 1895
salmon, crimson base
G 47, 378!
- Salmon Queen with variegated foliage*
(SUTTON 1921)
G 85, 79
- Salmonium* FROEBEL 1900 (*Froebel's
Lachsrotes, Lachskönigin*)
salmon red; tetraploid; from *Sal-
mon Queen*
GW 5, 482!; MH 28, 150!; MDGZ
35, 289
- Salzburg* PREGETTER (1939)
salmon scarlet; double; scented
BPB 43, 25
- Sanguineum* BENARY 1887
dark purplish red
- Scarlet King* (BLACKMORE & LANGDON
1921)
crimson scarlet
- Schneeflocke* (HAAGE & SCHMIDT 1902)
- Schneeflocke* J. C. SCHMIDT 1905
pure white
MDGZ 28, 173 DG 1925 403!
- Schneekönigin* BINNEWIES (1906)
pure white
MDGZ 21, 345, 25, 199
- Schöne Bystritzerin* CHVATIK 1931
double
MDGZ 46, 283

- Schöne Dresderin* RICHTER 1912
salmon; white × *Salmeoneum*
MDGZ 36, 126, 127; 45, 253
- Schöne von Köln* GRAETZ (1925)
salmon pink
MDGZ 40, 137!
- Schwerinae* SCHWERIN 1912
fl. campanulate
GF 61, 120
- Semperflorens* (HAAGE & SCHMIDT 1863)
- Septimus F. Beck* (FORSYTH 1925)
- Silberlachs* BRAUKMAN 1929
- Silberstrahl* (1939)
red with narrow silvery margin
- Snowflake* LITTLE FCC 1871
pure white
FM 1872 t. 13!
- Sonnenstrahl* (BENARY 1907)
rose, crimson base
- Souvenir de l'Argonne* GAIGNÉ 1925
fringed; salmon; salmon × red
fringed form
- Souvenir de la Somme* GAIGNÉ 1925
bright salmon
- Splendens* MÜLLER 1873
white, crimson base
- Splendens roseum magnificum* WIEHLE
1885
rose with a yellowish hue
- St George* St George AM 1913
salmon; leaves bordered with silver
GC 353, 443!; GM 54, 79; FE 25, 331
- Steiermark* PREGETTER (1940)
purplish rose; fringed; scented
- Striata* LITTLE (1882)
pale rosy lilac, striped with white
- Striatum* (1871)
- Striatum* ODELL FC 1889
reddish purple striped with white
- (The) Sultan* (1921)
- Sunray* St George FCC 1891
rose, crimson base
- Sylphide* (MAARSE 1930)
purple with dark base mutation from
white
- Triomphe de l'Exposition* CAILLAUD 1900
dark purple; from *Roi des noirs*
- Triomphe de Lyon* RIVOIRE 1905
blush with crimson base and fringed;
Papilio × *Fimbr. splend.*
- Una* WIGGINS (1884)
pure white
- Unicum* (HAAGE & SCHMIDT 1871)
white, purple base
- Universum* GRAFF 1871
white, purple base
NDGM 1871 161!
- Universum flore pleno* DEMUTH 1885
white, purple base; double
- Variiegatum* HENDERSON (1861)
blush, spotted, crimson base
IB 2, t. xxx!
- Verbesserte Montblanc* (WEIGELT 1929)
white
GF 78, 96
- Vesuvius* WIGGINS (1884)
bright crimson
- Vesuvius* MAY FCC 1891
dark crimson
- Viktoria* EHRENDORF (1898)
rose
MDGZ 13, 389
- Viktoria* KRAUSE 1907, see *Fimbr. carm.*
marg.
- Violette* LITTLE (1873)
rosy purple
- Vivid* MAY AM 1896
- Vulcan* SUTTON (1890)
deep maroon
G 48, 182!; GWd 15, 441
- Vuurbaak* (1928)
salmon scarlet
- Webb's New Scarlet Queen* (1921)
- Weiszer Schwan* J. C. SCHMIDT
pure white *Rococo*
- Weiszling* CHVATIK 1933
double, scented
- White Beauty* JAMES FCC 1878
- White Butterfly* SUTTON = *Miss Lilian*
Cox
white
G 48, 182!; GWd 15, 369
- White Gem* LITTLE FCC 1882
- White Perfection* LITTLE FCC 1873
FP 1874 181!
- White Swan* EDMONDS FCC 1877
- Wilhelm I* Ad. SCHMIDT
NDGM 1868 65!
- Zartlachs* BRAUKMAN 1929

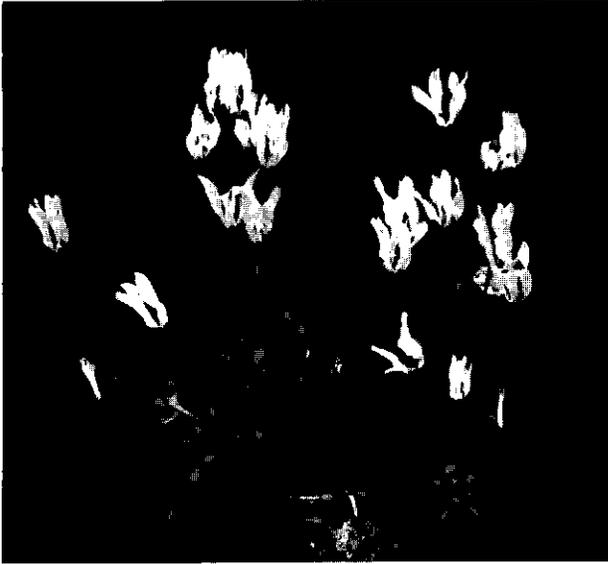


Fig. 1. *Cyclamen persicum* MILL. Old plant. imported from Cyprus



Fig. 2. Offspring from a small flowered plant. Sown August 1948, photograph taken on January 18th, 1950



Fig. 3. *Cyclamen persicum* MILL. Variability in flowers of plants imported from Cyprus and Palestine



Fig. 4. *Cyclamen persicum* MILL. Variability in leaves of plants imported from Cyprus and Palestine



Fig. 5. Oldest picture of *Cyclamen persicum* : „*Cyclamen Vernum Majus Flore Albe odorato*”, from ABRAHAM MÜNTING, *Naauwkeurige beschrijving der Aardgewassen* (1696)



Fig. 7. *Cyclamen „Giganteum”*. Exhibited by J. EDMONDS in 1870. From: The floral magazine IX (1870), t. 488



Fig. 8. One of the oldest giant forms in Germany: „*Universum*”. From: NEUBERT, Deutsches Magazin für Garten und Blumenkunde 1871, 161



Fig. 9. The most famous of the first giant forms: „*Giganteum*” of B. S. WILLIAMS. From: The floral magazine news series 1879. t. 163



Fig. 10. „*Salmon Queen*”, the oldest strain with salmon pink flowers. Not a giant form. From: The garden XLV11 (1895), 378



Fig. 11. „*Salmoreum*”, the oldest giant strain with salmon flowers. Put upon the market by FROEBEL, Zürich, in 1900. Picture from Die Gartenwelt V (1900-'01), 482



Fig. 12. A striped *Cyclamen*
(„*Harlekin*“)



Fig. 13. A fringed *Cyclamen*
(„*Rococo*“, dark red)



Fig. 14. A fringed *Cyclamen* („*Fimbriatum carmineo-marginatum*“)



Fig. 15. A double *Cyclamen*



Fig. 16. Dark red with narrow
„silver” margin



Fig. 17. Salmon red with broad
white margin („Baard-
se's Wonder")

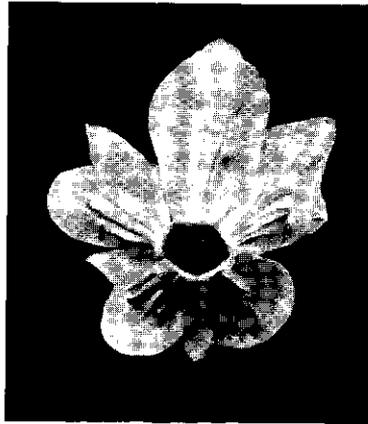


Fig. 18. A crested *Cyclamen* („*Bush
Hill Pioneer*")